GHS Classification

ID202 Phthalic anhydride

CAS 85-44-9 Date Classified: Jul. 24, 2006 (Environmental Hazards: Mar. 31, 2006)

Physical Hazards Reference Manual: GHS Classification Manual (Feb. 10, 2006)

Hazard class		Classification	symbol	signal word	hazard statement	Rational for the classification
1	Explosives	Not applicable	–	–	–	Containing no chemical groups with explosive properties
2	Flammable gases	Not applicable	–	–	–	Classified as "solid" according to GHS definition
3	Flammable aerosols	Not applicable	–	–	–	Not aerosol products
4	Oxidizing gases	Not applicable	–	–	–	Classified as "solid" according to GHS definition
5	Gases under pressure	Not applicable	–	–	–	Classified as "solid" according to GHS definition
6	Flammable liquids	Not applicable	–	–	–	Classified as "solid" according to GHS definition
7	Flammable solids	Classification not possible	–	–	–	Classification not possible due to lack of data, though classified as "flammable" by ICSC (2004)
8	Self-reactive substances and mixtures	Not applicable	–	–	–	Containing no chemical groups with explosive or self-reactive properties
9	Pyrophoric liquids	Not applicable	–	–	–	Classified as "solid" according to GHS definition
10	Pyrophoric solids	Not classified	–	–	–	Not pyrophoric when in contact with air at ordinary temperatures: the auto-ignition temperature is 570degC (ICSC, 2004)
11	Self-heating substances and mixtures	Classification not possible	–	–	–	Test methods applicable to liquid substances are not available (melting point: 131degC (ICSC, 2004), test temperature: 140degC)
12	Substances and mixtures, which in contact with water, emit flammable gases	Not applicable	–	–	–	Containing no metals or metalloids (B, Si, P, Ge, As, Se, Sn, Sb, Te, Bi, Po, At)
13	Oxidizing liquids	Not applicable	–	–	–	Classified as "solid" according to GHS definition
14	Oxidizing solids	Not applicable	–	–	–	Organic compounds containing oxygen (but not fluorine and chlorine), with the oxygen bound to carbon and hydrogen (but not to other elements)
15	Organic peroxides	Not applicable	–	–	–	Organic compounds containing no "-O-O-" structure
16	Corrosive to metals	Classification not possible	–	–	–	Test methods applicable to solid substances are not available

Health Hazards

Hazard class		Classification	symbol	signal word	hazard statement	Rational for the classification
1	Acute toxicity (oral)	Category 4	Exclamation mark	Warning	Harmful if swallowed	Based on the rat LD50 (oral route) value of 1,530mg/kg (MOE Risk Assessment vol. 2 (2003)).
1	Acute toxicity (dermal)	Classification not possible	–	–	–	Classification not possible because the rabbit LD50 (dermal route) values of >3,160mg/kg and >10,000mg/kg (IUCLID (2000)) are not definitive
1	Acute toxicity (inhalation: gas)	Not applicable	–	–	–	Due to the fact that the substance is "solid" according to the GHS definition and inhalation of its gas is not expected.
1	Acute toxicity (inhalation:	Classification not possible	–	–	–	No data available
1	Acute toxicity (inhalation: dust, mist)	Classification not possible	–	–	–	Because the rat LC50 (inhalation) value of >0.21mg/L (34ppm when the conversion factor of 1ppm = 6.16mg/m3 (20degC) was applied) (MOE Risk Assessment vol. 2 (2003)) exceeded the saturated vapour concentration (0.03ppm) under a saturated vapour pressure of 0.0003hPa (20degC), the substance was considered as "dust exposure." However, classification is not possible since the LC50 of >0.21mg/L is not a fixed value.
2	Skin corrosion / irritation	Category 2	Exclamation mark	Warning	Causes skin irritation	Based on the description in the report on rabbit skin irritation tests (CERI Hazard Data 2000-54 (2001)): "The substance induced moderate irritation when applied to abraded skin."
3	Serious eye damage / eye irritation	Category 1	Corrosion	Danger	Causes serious eye damage	Based on the description in the report on rabbit eye irritation tests (CERI Hazard Data 2000-54 (2001)): "severely irritating to the eye." Although classified into Category 1-2A in the absence of data on reversibility, the substance should be placed in Category 1 from the viewpoint of safety.
4	Respiratory/skin sensitization	Respiratory sensitization: Category 1 Skin sensitization: Category 1	(Respiratory sensitization) Health hazard (Skin sensitization) Exclamation mark	(Respiratory sensitization) Danger (Skin sensitization) Warning	(Respiratory sensitization) May cause allergy or asthma symptoms or breathing difficulties if inhaled (Skin sensitization) May cause an allergic skin reaction	Respiratory sensitization: Due to the fact that the substance is reported as a "Respiratory Sensitizing Substance" by the ad hoc committee of the Japanese Society of Occupational Allergy (2004). Skin sensitization: Based on the description in the report on Buehler tests and Intracutaneous tests on guinea pigs (CERI Hazard Data 2000-54 (2001)): "sensitization: positive." Also based on the overall conclusion made by CERI Hazard Data 2000-54 (2001): "The substance possesses a potential for sensitization for human skin."
5	Germ cell mutagenicity	Classification not possible	–	–	–	Based on the absence of data on in vivo mutagenicity/genotoxicity tests and no positive data on mutagenicity tests in vitro (several indices).
6	Carcinogenicity	Not classified	–	–	–	Due to the fact that the substance is classified as Category A4 by ACGIH (2001).
7	Toxic to reproduction	Category 2	Health hazard	Warning	Suspected of damaging fertility or the unborn child	Based on the evidence of adverse effects on sperm production, testes and epididymis, described in MOE Risk Assessment vol. 2 (2003) (though no data are available on maternal toxicity).
8	Specific target organs/systemic toxicity following single exposure	Category 3 (respiratory tract irritation)	Exclamation mark	Warning	Causes damage to organs (respiratory tract irritation)	Based on the human evidence: "burning sensation in the upper respiratory tract and coughing were noted immediately after accidental inhalation of high concentrations" (CERI Hazard Data 2000-54 (2001)).

9	Specific target organs/systemic toxicity following repeated exposure	Category 1 (respiratory organs)	Health hazard	Danger	Causes damage to organs through prolonged or repeated exposure (respiratory organs)	Based on the human evidence including "conjunctivitis, hemorrhagic rhinorrhea, nasal mucosal atrophy, coughing, bloody phlegm, bronchitis, pulmonary emphysema," "after the latency period of 16 years, 13 patients (11%) had chronic bronchitis and 21 (18%) had asthma," "the substance-induced asthma was observed" (CERI Hazard Data 2000-54 (2001)), "asthma occurred following exposure" (HSDB (2005)), "hemorrhagic rhinorrhea, nasal mucosal atrophy, hoarse voice, coughing, bloody phlegm, bronchitis and pulmonary emphysema" (ACGIH (7th, 2001)).
10	Aspiration hazard	Classification not possible	—	—	—	No data available

Environmental Hazards

Hazard class		Classification	symbol	signal word	hazard statement	Rational for the classification
11	Hazardous to the aquatic environment (acute)	Category 3	-	-	Harmful to aquatic life	It was classified into Category 3 from 72 hours ErC50=68mg/L of the algae (Selenastrum) (MOE Eco-Toxicity Tests of Chemicals, 2003).
11	Hazardous to the aquatic environment (chronic)	Not classified	-	-	-	Since there was rapidly degrading (the decomposition by BOD: 85.2% (Existing Chemical Safety Inspections Data)) and the bio-accumulation was low (log Kow=1.6 (PHYSPROP Database, 2005)), it was claasified into Not classified.